

Amendments To The Claims

The following claim listing replaces all prior versions of the claims in the application.

Claim Listing

1.(Previously Presented) A method of detecting at least one of a chemical and a species related to the chemical, the method comprising the steps of:

providing a metal surface having at least one of a size and a shape that increases surface enhanced Raman scattering;

exposing the metal surface to a fluid suspected of containing the at least one of a chemical and a related species, the at least one of the chemical and the related species adsorbing to the metal surface if present in the fluid;

exciting the metal surface with light to cause the metal surface to produce the surface enhanced Raman scattering; and

analyzing data obtained from the surface enhanced Raman scattering to determine the existence of the at least one of a chemical and a related species in the fluid.

2.(Previously Presented) The method according to claim 1, further comprising the step of treating the metal surface with at least one additive that enhances the surface enhanced Raman scattering due to the additive's affect on the surface.

3.(Previously Presented) The method according to claim 1, further comprising the step of treating the metal surface with at least one additive that acts sacrificially to prevent the surface enhanced Raman scattering produced by the metal surface from being adversely affected by the at least one of a chemical and a related species.

4.(Previously Presented) The method according to claim 1, further comprising the step of treating the metal surface with at least one additive that acts as an intermediate to react with the at least one of a chemical and a related species prior to interaction with the at least one of a chemical and a related species.

5.(Previously Presented) The method according to claim 1, further comprising the step of treating the metal surface with an activator that causes the metal surface to be more surface-enhanced-Raman reactive toward the at least one of a chemical and a related species.

6.(Previously Presented) The method according to claim 1, further comprising the step of treating the metal surface with a stabilizer that stabilizes the metal surface to maintain surface enhanced Raman scattering.

7.(Previously Presented) The method according to claim 1, further comprising the step of treating the metal surface with a sacrificial agent to prevent the metal surface from being dissolved or adversely affected by the presence of the at least one of a chemical and a related species.

8.(Original) The method according to claim 1, further comprising the step of releasing the at least one of a chemical and a related species into a gas phase prior to performing the exposing step.

9.(Previously Presented) The method according to claim 8, further comprising the step of providing a barrier between the gas phase chemical or the related species and the metal surface.

10.(Canceled)

11.(Previously Presented) The method according to claim 1, wherein the metal surface is made of silver.

12.(Previously Presented) The method according to claim 1, wherein the metal surface is made of gold.

13.(Previously Presented) The method according to claim 1, wherein the metal surface

comprises at least one nanoparticle.

14.(Previously Presented) The method according to claim 13, wherein the at least one nanoparticle is provided in one of a colloidal solution form and a solution form.

15.(Original) The method according to claim 13, wherein the at least one nanoparticle is provided in a lyophilized colloidal form.

16.(Previously Presented) The method according to claim 1, wherein the metal surface has a roughness that mimics the size and shape of a nanoparticle.

17.(Original) The method according to claim 1, wherein the at least one of a chemical and a related species is cyanide.

18.(Withdrawn) A kit for detecting at least one of a chemical and a species related to the chemical, the kit comprising:

a surface having at least one of a size and a shape that increases surface enhanced Raman scattering; and

at least one additive for performing at least one of enhancing the surface enhanced Raman scattering due to the additive's affect on the surface, acting sacrificially to prevent the surface enhanced Raman scattering produced by the surface from being adversely affected by the at least one of a chemical and a related species, and acting as an intermediate to react with the at least one of a chemical and a related species prior to interaction with the at least one of a chemical and a related species.

19.(Withdrawn) The kit according to claim 18, wherein the at least one additive includes an activator that causes the surface to be more surface-enhanced-Raman reactive toward the at least one of a chemical and a related species.

20.(Withdrawn) The kit according to claim 18, wherein the at least one additive includes a stabilizer that stabilizes the surface to maintain surface enhanced Raman scattering.

21.(Withdrawn) The kit according to claim 18, wherein the at least one additive includes a sacrificial agent to prevent the surface from being dissolved or adversely affected by the presence of the at least one of a chemical and a related species.

22.(Withdrawn) The kit according to claim 18, wherein the at least one additive includes a material for releasing the at least one of a chemical and a related species into a gas phase.

23.(Withdrawn) The kit according to claim 18, further comprising a barrier that prevents a liquid form of the at least one of a chemical and a related species from contacting the surface but allows a gaseous form of the at least one of a chemical and a related species to pass therethrough and contact the surface.

24.(Withdrawn) The kit according to claim 18, wherein the surface is composed of a metal.

25.(Withdrawn) The kit according to claim 24, wherein the metal is silver.

26.(Withdrawn) The kit according to claim 24, wherein the metal is gold.

27.(Withdrawn) The kit according to claim 18, wherein the surface comprises at least one nanoparticle.

28.(Withdrawn) The kit according to claim 27, wherein the at least one nanoparticle is provided in one of a colloidal form and a solution form.

29.(Withdrawn) The kit according to claim 27, wherein the at least one nanoparticle is provided in a lyophilized colloidal form.

30.(Withdrawn) The kit according to claim 18, wherein the surface has a nanoparticle-like texture.

31.(Withdrawn) The kit according to claim 18, wherein the at least one of a chemical and a related species is cyanide.

32.(Withdrawn) The kit according to claim 18, further comprising a container for storing the surface and the at least one additive.

33.(Withdrawn) The kit according to claim 18, further comprising a container for storing the surface and the at least one additive, and mixing the at least one additive with the surface and a sample to be tested for the existence of the at least one of a chemical and a related species.

34.(New) A method of detecting at least one of a chemical and a species related to the chemical, the method comprising the steps of:

providing a plurality of metal nanoparticle islands on a surface, the plurality of metal nanoparticle islands capable of producing surface enhanced Raman scattering;

exposing the plurality of metal nanoparticle islands to a fluid suspected of containing the at least one of a chemical and a related species, the at least one of the chemical and the related species adsorbing to metal surfaces of the plurality of metal nanoparticle islands if present in the fluid;

exciting the metal surfaces of the plurality of metal nanoparticle islands with light to cause the metal surfaces to produce the surface enhanced Raman scattering; and analyzing data obtained from the surface enhanced Raman scattering to determine the existence of the at least one of a chemical and a related species in the fluid.